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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/456,894      | 12/07/1999  | CLINTON EDWARD LUM   | 003845.P002         | 7047             |

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| EXAMINER |
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| ART UNIT | PAPER NUMBER |
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2157

DATE MAILED: 04/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |   |  |  |
|------------------------------|---|--|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>09/456,894    | <b>Applicant(s)</b><br>LUM, CLINTON EDWARD |  |
|                              | <b>Examiner</b><br>Hussein A. El-chanti | <b>Art Unit</b><br>2157                    |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 04 February 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-26,28 and 29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-26,28 and 29 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

*Handwritten signature*

### **DETAILED ACTION**

1. This action is responsive to restriction election received on Feb. 4, 2005. Claims 1-26 and 28-29 were elected with traverse.

#### ***Election/Restrictions***

2. Applicant's election with traverse of claims 1-26 and 28-29 in the reply filed on Feb. 4, 2005 is acknowledged. The traversal is on the ground(s) that 1) the search for all the groups will be the same; 2) examination of additional all the groups can be done without additional burden on the examiner. This is not found persuasive because the subcombinations have distinct functionalities that are not required by separate subcombinations. In the instant case, invention II has separate utility such as sharing buffer that stores code for a distributed based security address space and invention III has separate utility such as selective transmission of packets to protocol drivers.

The requirement is still deemed proper and is therefore made FINAL.

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102(e) that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claim 1-26 and 28-29 are rejected under 35 U.S.C. 102(e) as being anticipated by Mahalingham et al., U.S. Patent No. 6,496,858 (referred to hereafter as Mahalingham).

Mahalingham teaches the invention as claimed including a system and method for reconfiguring a network interface device and connecting the device to an external network (see abstract).

As to claim 1, Mahalingham teaches a machine readable-medium having stored thereon sequences of instructions which when executed by a processor cause the processor to perform the acts of:

disabling access to at least a first section of code in a network driver interface, wherein the network driver interface provides for communication between one or more media access control units and one or more protocol drivers in a computer system according to a set of bindings (see col. 5 lines 45-col. 6 lines 10, the NIC is disabled);

patching the first section of code to cause the insertion of rerouting driver into the one or more communication paths provided by the set of bindings (see col. 7 lines 55-col. 8 lines 20, the patching of the bindings is performed and the packets are rerouted according to the new set of bindings); and

re-enabling access to the patched first section of code (see col. 8 lines 20-55, the NIC driver is re-enabled to service binding requests).

As to claim 11, Mahalingham teaches a computer implemented method comprising:

transmitting from a remote host to a first target computer on a network an installation application and a rerouting driver (see col. 5 lines 45-col. 6 lines 10);

transmitting from the remote host to the first target computer a command to cause the first target computer to execute the installation application (see col. 8 lines 5-30);

the first target computer, responsive to receipt of the command, executing the installation application, wherein the first target computer includes a network driver interface that provides for communication between one or more media access control units and one or more protocol drivers according to a set of bindings (see col. 7 lines 55-col. 8 lines 55); and

the first target computer responsive to executing the installation application causing the modification of the network driver interface to insert the rerouting driver into the one or more communication paths provided by the set of bindings without restarting the first target computer (see col. 7 lines 55-col. 8 lines 45).

As to claim 18, Mahalingham teaches a computer system comprising:

a protocol driver (see col. 5 lines 40-47);

a media access control unit (see col. 2 lines 8-22);

a network driver interface to store a first binding defining a communication path between the protocol driver and the media access control unit, the network driver interface coupled to communicate packets with the media access control unit, the network driver interface patched to communicate the packets with a rerouting driver (see col. 8 lines 15-45); and

the rerouting driver being coupled to communicate the packets with the protocol driver (see col. 8 lines 15-45).

As to claim 23, Mahalingham teaches a rerouting driver for remotely installing network drivers and software without restarting the computer system following installation, the computer system having an operating system in which a network driver interface provides communication of information between at least one media access control unit and at least one protocol driver on the computer system, the rerouting driver comprising:

control code, for controlling the rerouting driver (see col. 5 lines 4-47);

binding code, for establishing at least one binding at the network driver interface so that the rerouting driver is bound to at least one media access control unit (see col. 2 lines 5-15);

patching code, for inserting template jumps into at least a first section of code in the network driver interface, the template jumps providing jumps to templates in the rerouting driver so that information from at least one media access control unit destined for at least one protocol driver is rerouted to the rerouting driver (see col. 6 lines 55-col. 7 lines 20, the patching of the bindings is performed and the packets are rerouted according to the new set of bindings);

at least one template, for receiving information from at least one template jump in the network driver interface (see col. 7 lines 55-col. 8 lines 20, the patching of the bindings is performed and the packets are rerouted according to the new set of bindings);

inserted code, for evaluating rerouted information received by the template jumps (see col. 7 lines 55-col. 8 lines 20, the patching of the bindings is performed and the packets are rerouted according to the new set of bindings).

As to claim 26, Mahalingham teaches a method for disabling and re-enabling access to code in a multiprocessor system having a shared memory and a network driver interface comprising:

selecting a first section of code in a first central processing unit that is to be modified (see col. 5 lines 25-40 and col. 6 lines 1-5, the processor being any of the gateway interface device);

writing the first section of code into the cache memory of the first central processing unit (see col. 5 lines 25-40);

overwriting a portion of the first section of code in cache memory with blocking code to create a first version of code (see col. 5 lines 25-40);

writing the first version of code into shared memory (see col. 5 lines 25-40, shared memory being any of the gateway interface device);

modifying the first version of code in the cache memory to create a second version of code, wherein a portion of the code following the blocking code is overwritten with template jumps to effect a static patch of the network driver interface (see col. 5 lines 25-40);

writing the second version of code into shared memory (see col. 5 lines 25-40);

modifying the second version of code in the cache memory with code to create a third version of code, wherein the blocking code is overwritten to remove the blocking code (see col. 7 lines 55-col. 8 lines 20, the patching of the bindings is performed and the packets are rerouted according to the new set of bindings); and

writing the third version of code into shared memory (see col. 7 lines 40-col. 8 lines 47).

As to claim 28, Mahalingham teaches a machine readable medium having stored therein instructions which when executed cause a set of one or more processors to perform the following:

disabling access to a first section of code, the first section of code to be executed when to provide a communication path between a media access control unit and an application the first section of code including a generic call (see col. 5 lines 45-col. 6 lines 10, the NIC is disabled); and

overwriting the first section of code with a second section of code whose execution causes execution flow to be rerouted to a third section of code in a rerouting driver, the second section of code being larger than the first section of code, the third section of code when executed completing the communication path and returning execution flow, the third section of code including additional code not present in the first section of code that is now inserted into the communication path (see col. 7 lines 55-col. 8 lines 20, the patching of the bindings is performed and the packets are rerouted according to the new set of bindings).

As to claims 2, 12 and 19, Mahalingham teaches the machine readable-medium, method and system of claims 1, 11 and 19 respectively wherein the patching is static patching (see col. 8 lines 6-30).

As to claims 3 and 13, Mahalingham teaches the machine readable-medium and method of claims 2 and 12 respectively wherein the static patching includes inserting a template jump from the network driver interface to a template in the rerouting driver (see col. 8 lines 40-53).

As to claims 4 and 14, Mahalingham teaches the machine readable-medium and method of claims 3 and 13 respectively wherein the template jumps are inserted in the network driver interface so that a CALL instruction to the protocol driver is replaced with a JUMP to the template in the rerouting driver, the template containing the CALL instruction (see col. 8 lines 40-53).

As to claim 5, Mahalingham teaches the machine readable-medium of claim 2 wherein the patching the first section of code creates at least one new binding between the network driver interface and the rerouting driver (see col. 8 lines 20-53).

As to claim 6, Mahalingham teaches the machine readable-medium of claim 5 wherein the at least one new binding provides for communication between one or more media access control units and a capturing unit in the rerouting driver (see col. 8 lines 40-53).

As to claim 7, Mahalingham teaches the machine readable-medium of claim 6 wherein the capturing unit is used to intercept communications over the at least one new binding (see col. 4 lines 49-65 and col. 5 lines 41-47).

As to claims 8, 15 and 20, Mahalingham teaches the machine readable-medium, method and system of claims 1, 11 and 18 respectively wherein the patching is dynamic patching (see col. 7 lines 55-col. 8 lines 50).

As to claims 9 and 16, Mahalingham teaches the machine readable-medium and method of claims 8 and 15 respectively wherein the dynamic patching includes establishing a new binding between at least one media access control unit and dynamic patching code in the rerouting driver and inserting a template jump in the network driver interface to a template in the rerouting driver (see col. 7 lines 55-col. 8 lines 50).

As to claims 10 and 17, Mahalingham teaches the machine readable-medium and method of claims 9 and 16 respectively wherein the template jumps are inserted in the network driver interface so that a CALL instruction to the protocol driver is replaced with a JUMP to the template in the rerouting driver, the template containing the CALL instruction (see col. 7 lines 55-col. 8 lines 50).

As to claim 21, Mahalingham teaches the computer system of claim 18 wherein the rerouting driver further comprising a capture unit to store in a buffer one or more of the packets for evaluation (see col. 8 lines 6-30).

As to claim 22, Mahalingham teaches the computer system of claim 18 wherein the network interface to also store a second binding defining a communication path between the rerouting driver and the media access control unit and the capture unit to store in the buffer the packets destined for the rerouting driver (see col. 8 lines 15-50).

As to claim 24, Mahalingham teaches the rerouting driver of claim 23 wherein the control code identifies a starting memory address of the network driver interface

instruction code and disables access to the first section of code and further wherein the patching code following the disabling access operates to overwrite the first section of code and additional pre-determined memory addresses so the all the pre-determined memory addresses are patched (see col. 5 lines 45-col. 6 lines 10, the NIC is disabled).

As to claim 25, Mahalingham teaches the rerouting driver of claim 23 wherein the patching code responsive to receipt of information being sent from the network driver interface determines the instruction code address that sent the information and overwrites the first section of code at that address so that memory addresses are incrementally patched as information is received from the network driver interface (see col. 7 lines 55-col. 8 lines 20).

As to claim 29, Mahalingham teaches the machine-readable medium of claim 28 wherein the second section of code contains a template jump to a template in the third section code (see col. 8 lines 40-53).

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hussein A. El-chanti whose telephone number is (571)272-3999. The examiner can normally be reached on Mon-Fri 8:30-5:00.

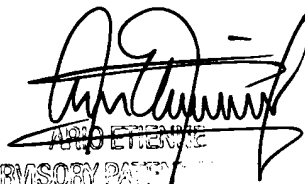
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ario Etienne can be reached on (571)272-4001. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2157

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Hussein El-chanti

April 15, 2005



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SUPERVISORY PATENT